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Case Report

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Rib flare of an adolescent: case report

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ABSTRACT

We evaluated a seventeen-year-old male patient due to a protrusion at the level of the left costal arch. He stated that he had no disease and was even involved in a heavy sport like amateur football. The study aimed to examine the cause of rib dislocation and treatment options of the operated patient in light of the literature, as she did not accept other types of treatment due to periodic pain in the protruded body area and cosmetic discomfort.

Keywords: Flare, rib, surgery

INTRODUCTION

Mobility in the cartilage joints of ribs can cause pain.[1] The name of the condition is slipping rib syndrome. The cartilage joints in the left costal arch are among the joints most affected in this case. Most of the time, even a hooking maneuver is not necessary to detect this condition in people. This examination also has a pain-inducing effect.[1,2]

Rib dislocations can occur for various reasons, such as infection and tumoral pathologies, but they can also develop as deformities for unexplained reasons. The most common are deformities defined as pectus excavatum (PE) or pectus carinatum (PC). Treatment methods have been determined for PE and PC, but a definitive approach for flare ribs has yet to be.

This paper aims to present our treatment process for our patient with a flared rib in the light of the literature.

CASE

A seventeen-year-old male patient came with a complaint of dislocation of the left costal arch. He stated that he had been aware of it for a long time (**Figure 1, 2**). According to the information received from his family, we learned that he did not have a history of trauma or a previous disease in the location where the dislocation occurred. He said that he occasionally had pain that did not last long and that he was mostly visually disturbed. Blood tests were routine. There was no noticeable feature in the computed tomography examination except for the asymmetric appearance of the rib (**Figure 3**). We recommended to the patient compressive external bracing. We explained it in article that external bracing is proposed. However, after some other hospital evaluation, containing physiotherapy and related branches, it turned out that he wanted surgical treatment. However, he stated that he did not want to use it. Although we stated that keeping it this way would not cause a functional problem, he requested surgical removal for cosmetic reasons. Thereupon, we operated on through a transverse incision made over the rib dislocation (**Figure 4**). He was discharged on the third postoperative day. During the follow-up, we detected that he was cosmetically satisfied and had no complaints (**Figure 5, 6**). He was banned from heavy training and competitions for two months. After two months, he was asked to use protective bandages in competitions.

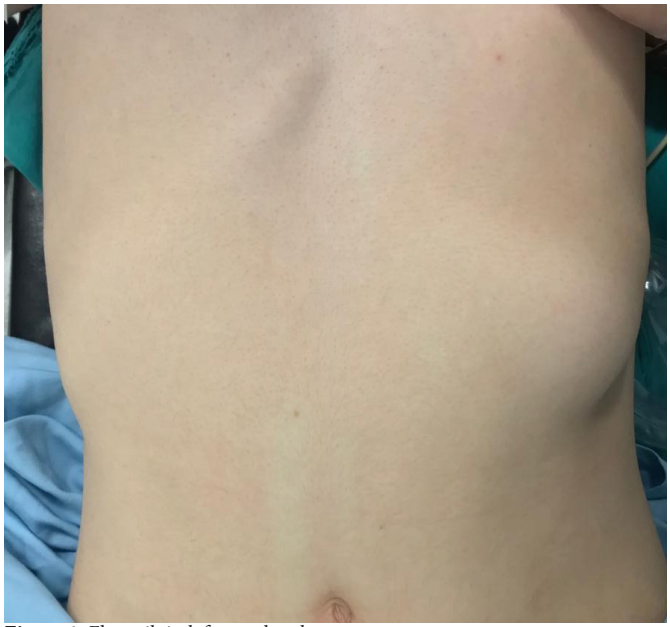

Figure 1. Flare rib in left costal arch

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Figure 2. Flare rib from side position

Figure 5. Side position of left costal margin after operation

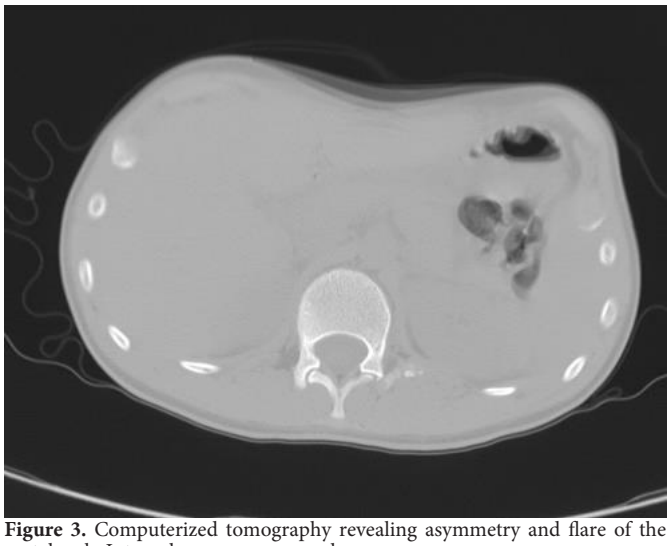

Figure 3. Computerized tomography revealing asymmetry and flare of the costal arch. Internal organs are normal

Figure 6. Anterior position with lateral incision

Figure 4. Resected deformed parts of rib

DISCUSSION

In people with rib deformity who do not have functional, that is, respiratory or cardiac problems, surgery can be done or minimal surgical intervention can be preferred. However, other than surgical procedures, more harmless treatment methods such as compression and vacuum have been developed recently. Bracing materials have many different features and techniques for compression.[3] Regardless of their features, these devices can achieve a high cure rate of up to 97% in pectus carinatum patients, provided they have been placed appropriately.[3] The treatment method in question is in the form of flared ribs, as in our patient, and the probability of success is lower in cases that create asymmetry.[3,5] However, it may be preferable to use it before surgery.[3]

Flare rib condition may occur together with PE.[4] In these cases, the bars to be placed during minimally invasive repair for PE can correct this protrusion by applying pressure.[4]

Another form of treatment for flare rib is surgical excision. However, if surgery is preferred, it must be is performed at the cartilage level because there is a high probability of recurrence of 26%.[1,6] Stabilizer plates can be placed to avoid recurrence on the rib parts where cartilage tissue has been removed.[1] In our patient, resection was performed from more posterior to the distance where the asymmetry occurred, not from the cartilage level, and the open bone end was closed with bone wax. No problems were encountered in this application.

CONCLUSION

Treatment may not be planned for people with flare rib problems and no other rib deformities, as there will be no functional problems. However, external bracing may

be considered if a pain complaint suggests slipping rib syndrome or cosmetic problems. In cases where the patient does not prefer any other treatment, a surgical procedure can be planned as excision or bar placement.

ETHICAL DECLARATIONS

Informed Consent

The patient's parents signed a free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

REFERENCES

1. McMahon LE, Salevitz NA, Notrica DM. Vertical rib plating for the treatment of slipping rib syndrome. *J Pediatr Surg.* 2021;56(10):1852-1856. doi:10.1016/j.jpedsurg.2020.09.062
2. Madeka I, Alaparthi S, Moreta M, et al. A review of slipping rib syndrome: diagnostic and treatment updates to a rare and challenging problem. *J Clin Med*. 2023;12(24):7671. doi:10.3390/jcm12247671
3. Ermerak NO. Compressive external bracing in pectus carinatum: results of the first 100 patients. *Marmara Med J.* 2023;36(3):334-338. doi:10.5472/marumj. 1367999
4. Ermerak NO, Yuksel M. Modification of the Nuss procedure: the crossed bar technique for new subtypes of pectus excavatum. *Gen Thorac Cardiovasc Surg.* 2023;71(10):577-583. doi:10.1007/s11748-023-01940-9
5. Lei W, Shao M, Hu Y, et al. Vacuum bell therapy for pectus excavatum: a retrospective study. *BMC Pediatr.* 2024;24(1):173. doi:10.1186/s12887-024-04615-3
6. Shamberger RC. Congenital chest wall deformities. *Curr Probl Surg.* 1996;33(6):469-542. doi:10.1016/s0011-3840(96)80005-0